Tracing the Roots of Innovativeness in Family SMEs: The Effect of Family Functionality and Socioemotional Wealth

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By integrating literature on family functionality, family firms, and socioemotional wealth (SEW), we develop a theoretical model explaining how family functionality and SEW dimensions influence firm innovativeness. Our multi-group structural equation model on two samples of family SMEs shows that family functionality is positively linked to SEW, whereas divergences emerge on the effect of different SEW dimensions on innovativeness. Binding social ties, the emotional attachment of family members to the firm, and the renewal of family bonds through intra-family succession positively affect family SME innovativeness, while identification of family members with the firm has a negative effect. By deepening current understanding of the role and functionality of controlling families as determinants of their propensity to preserve SEW and achieve innovativeness, our findings offer important implications for theory and practice, paving the way for future research on SEW and family firm innovation.

Keywords: *Family SMEs, Family Functionality, Socioemotional Wealth, Innovativeness*

Practitioner Points

This article:

- Sensitizes family business members to the importance of the functional integrity and stability of relationships among family members in relation to the achievement of family-centered non-economic goals and firm innovativeness.
- Offers insights on the heterogeneous effects of the family-induced socioemotional wealth considerations that lead to a greater or lesser capacity to innovate.
- Illustrates actions to boost innovativeness for family firm decision-makers, advisors, and policy makers.

- Cautions decision-makers and advisors that rather than seeking to stifle socioemotional wealth considerations without discrimination, they should carefully distinguish between those with a positive effect on innovativeness and those with a negative one.

Introduction

Prior studies show that family ownership has important effects on innovation inputs, such as R&D spending (Chrisman and Patel, 2012) and technology acquisition (Kotlar et al., 2013), as well as on innovation outputs, such as patent citations (Block et al., 2013) and discontinuous technology adoption (König, Kammerlander, and Enders, 2013). Innovation scholars are consequently paying increasing attention to understanding how family ownership affects firm innovativeness, defined as the ability or capacity to innovate (Mairesse and Mohnen, 2002), and particularly small and medium-sized enterprises (SMEs) where innovation is just as important as it is difficult to achieve (e.g., De Massis, Frattini, and Lichtenthaler, 2013a).

Although this research stream has grown rapidly, mixed and inconsistent findings emerge (De Massis et al., 2012; Duran et al., 2015). Some scholars note that such inconsistency implies that family firms are heterogeneous and likely to produce diverse innovation outcomes (Chrisman and Patel, 2012). Accordingly, scholars call for research to identify the drivers of heterogeneity in innovation among family firms (e.g., Chrisman et al., 2015a; De Massis, Di Minin, and Frattini, 2015a; Filser et al., 2016).

We argue that the inconsistent findings in prior research can be reconciled by considering two important sources of heterogeneity among family firms: *family functionality*, referring to the functional integrity and stability of relationships, a construct of increasing interest in family firm research (e.g., Danes, 2014; Neff, 2015; Philbrick and Fitzgerald, 2007); and *socio-emotional wealth* (SEW), referring to the non-economic benefits derived from pursuing family-centered non-economic goals (Berrone, Cruz, and Gomez-Mejia, 2012). Both concepts are important drivers of heterogeneity among family firms, since these firms vary greatly according to the differences in family integrity associated with functionality (Smilkstein, 1978), which can affect the firm's achievement of economic and non-economic family goals (Danes et al., 1999), and their innovativeness depending on differences in SEW (Berrone et al., 2012). Consistent with this view, structural-functional theorists argue that family structures

relate to the functions families assign to their members and expect of them (Popenoe, 1996), thus affecting the performance of family functions (Johnson, 1971) and, in turn, the goals and behaviors of firms with family involvement. Likewise, prior research rooted in family science (e.g., Jaskiewicz and Dyer, 2017) argues that family interactions are related to family functions, which are associated with the family goals driving family activities, thereby supporting the presence of a link between family functionality and SEW.

What is more, pioneering research on family systems theory indicates that functioning family systems and stable family relationships are important for the sustainability of family firms (e.g., Danes et al., 2008; Jaskiewicz, Combs, and Rau, 2015; Stafford et al., 1999) and a major driver of key behaviors, such as those related to entrepreneurship (Danes et al., 2008). Hence, when exploring family firm behaviors, research suggests accounting for the effect of family interactions (Jaskiewicz and Dyer, 2017) in the form of integrity and stable relationships among family members, i.e., family functionality, on these firms' decision-making processes, e.g., their decision to focus on economic and non-economic goals (i.e., SEW). To extend and refine our knowledge of family firm behavior, recent family firm research points to the importance of considering family functions as well as family member interactions and relationships (Jaskiewicz and Dyer, 2017; Jaskiewicz et al., 2017).

However, to our best knowledge, no study examines the impact of family functionality and *each* of the different SEW dimensions on family firm innovativeness. As such, research is needed to investigate the family factors that determine family firm innovativeness and advance our limited understanding of the drivers of innovativeness (Hult, Hurley, and Knight, 2004).

In this study, we seek to advance knowledge on the family-specific antecedents of firm-level innovativeness by understanding how family functionality and the dimensions of SEW shape family firm innovativeness. More precisely, we seek to explain how family involvement affects innovativeness, which adds nuance to current theory on family firm innovation and holds promise in reconciling and explaining the mixed findings in extant literature focused

primarily on innovation inputs and outputs (Chua, Chrisman, and De Massis, 2015; De Massis et al., 2013a). In particular, we examine these relationships in family SMEs, as they play a dominant role in most world economies (Memili et al., 2015) and their innovativeness deserves a more detailed analysis (e.g., Sciascia et al., 2015).

Our study makes two main contributions. First, literature on family firm innovation shows the importance of SEW in affecting innovation decisions (Chrisman et al., 2015b; Kotlar et al., 2013), but generally treats SEW as a unidimensional construct, neglecting its multidimensional nature and the effects of its various dimensions. Second, existing literature on family firm innovation reports mixed results as to whether family firms are more or less innovative than their non-family counterparts (De Massis et al., 2013a; Duran et al., 2015). A better understanding of what drives family firms' capacity to innovate could be useful to resolve the conflicting results of prior studies (Craig et al., 2014; De Massis et al., 2015b). We argue that ignoring family functional integrity and the stability of relationships among family members (i.e., family functionality) is problematic given that our understanding of family firm behavior is limited. By revealing the effect of family functionality on SEW decisions, we hope to encourage future innovation scholars to reflect more deeply on the functioning of families and their potential impact on family firm innovation.

Innovativeness, Family Functionality, and Socioemotional Wealth

Innovativeness describes a firm's ability or capacity to innovate (Mairesse and Mohnen, 2002). Findings on family firm innovativeness show that "family firms are not a homogenous group" (Corbetta and Salvato, 2004, p. 360).

As families play a major role in their firms, and family-firm boundaries are often blurred (Deephouse and Jaskiewicz, 2013; Stevens, Kidwell, and Sprague, 2015), the family members' functional integrity and satisfaction with family-internal relationships may influence their decision-making processes (Jaskiewicz and Dyer, 2017) and choice of family and business

goals (Danes et al., 1999), including economic and non-economic goals (Berrone et al., 2012; Kammerlander and Ganter, 2015). The concept of family functionality is used to assess the health of the family firm system (e.g., Danes, 2014; Gardner et al., 2001; Neff, 2015; Philbrick and Fitzgerald, 2007). Family functionality describes the functional integrity of families (Danes et al., 1999) and encompasses adaptability, partnership, growth, affection, and resolution as common themes in social science literature analyzing families (Smilkstein, 1978). The concept represents the family members' satisfaction with each of these dimensions, their common interests, and perceived social support from family members with a focus on family members' emotional, communicative, and social relationships (Gardner et al., 2001). Although originating from medicine and psychiatry, family functionality is of growing interest in family firm research as it allows including the potential effect of family relationships on, amongst others, firm performance (Neff, 2015) and business tensions (Danes et al., 1999), to analyze roles, responsibilities, and predictors of family functionality from a female perspective (Danes and Olson, 2003; Philbrick and Fitzgerald, 2007), or to examine ways to manage work and family life in firm-owning families (Avery, Haynes, and Haynes, 2000).

To explore the antecedents of family firm innovativeness, we apply the concept of SEW, a dominant theoretical paradigm (e.g., Berrone et al., 2012; Cennamo et al., 2012) defined as the family-firm owners' non-economic gains deriving from ownership, comprising their aim to: (1) exert influence on the firm, (2) uphold a strong family identity with the firm, (3) preserve binding social ties, (4) maintain emotional attachment, and (5) ensure intra-family succession (Gomez-Mejia, Haynes, Nunez-Nickel, Jacobson, and Moyano-Fuentes, 2007). Although family firms seek to achieve both economic and non-economic goals, they are inclined to sacrifice economic gains to maintain their non-economic utility (Chrisman and Patel, 2012) when taking SEW as their primary reference point (Gomez-Mejia et al., 2007), thus aiming to preserve their SEW (Kammerlander and Ganter, 2015).

Family Functionality and Socioemotional Wealth in Family SMEs

Well-functioning families can gain access to resources including capital, assets, income, and labor (Philbrick and Fitzgerald, 2007), and show a high degree of integrity, commitment, and responsibility for each other (Smilkstein, 1978). They enjoy stable relationships, common interests, low conflict potential, and a high level of satisfaction. The resulting strong family bonds among family members and high level of mutual trust and commitment can benefit both the family and the firm when the emotional connection is intense (Sundaramurthy, 2008). These family bonds influence to what extent family members hold key governance positions, how they act in ownership and management positions in the firm, and how strongly their behavior focuses on the firm's wellbeing (Corbetta and Salvato, 2004; Stevens et al., 2015). This is consistent with the recent view that the family's functioning is fundamental to understanding family firm behavior (Jaskiewicz and Dyer, 2017).

Holding key governance positions, family members can "override, abolish or ignore" control mechanisms (Stevens et al., 2015, p. 207), and exert influence by steering the family firm in their favored direction, based on the family's aspirations (Ainsworth and Cox, 2003). SEW, however, relates to the family's desire to achieve non-economic goals and the question arises whether family functionality only relates to the family members' ability to control the firm and/or their willingness to do so. In well-functioning families, family members support, share responsibilities, and trust each other. Consistent with Kellermanns et al. (2012), we argue that family members of well-functioning families are stewards of the firm. Family members holding key governance positions and closely involved in the business may develop responsibility and commitment to the firm.

Particularly in family SMEs, given their small size, owners from well-functioning families may be incentivized to attain decision-making roles and thus influence essential firm decisions in the family's best interests. In family SMEs, ownership tends to be concentrated, giving power and control to the dominant family that tries to impose its own individual objectives and

strategies on the firm (Miller et al., 2008). Here, family functionality can channel family bonds in support of the firm and increase family members' influence on the business (Eddleston and Kellermanns, 2007).

Influencing family members' behaviors as owners, family bonds may also affect the family members' level of identification with the firm. For owning families, the sense of commitment and responsibility associated with family functionality may not be limited to the family, but includes firm activities, as these are typically intensely bound to each other. Indeed, the strong bonds of well-functioning families may lead to blurred family-firm boundaries (Stevens et al., 2015) so that no distinction can be made between the two systems, leading to a unique identity (e.g., Berrone et al., 2010). We therefore argue that well-functioning families that feel responsible for their families and their firms, and are deeply involved in the firm's processes (Teal and Hofer, 2003), will be more prone to identify themselves with the firm (Gomez-Mejia et al., 2007).

Reciprocal bonds, i.e., binding social ties or the firm's social relationships, may also extend beyond family members to a wide range of external and internal stakeholders (e.g., Miller and Le Breton-Miller, 2005). Stemming from strong, stable, and well-functioning family relationships, these bonds can be strengthened as they may provide mutual advantages compared to closed networks (Berrone et al., 2012), including social capital, relational trust (Coleman, 1990), tacit knowledge (Sirmon and Hitt, 2003), closeness, and interpersonal solidarity (Uzzi, 1997).

Family SMEs are said to be particularly proactive in their surrounding communities and support stakeholders in their geographic area (Campopiano, De Massis, and Chirico, 2014). Consequently, a sense of stability, commitment, and belonging emerges (Miller and Le Breton-Miller, 2005) that is reinforced by family influence (Carnes and Ireland, 2013) and culture (Laforet, 2013) through increased identification, solidarity, reliability, and trust. Moreover, family functionality can increase the emphasis of social ties in family SMEs. In particular,

family members of well-functioning families typically get along well and their social support of each other is strong, since the level of tension is low (Danes et al., 1999). These families presumably seek to preserve their good social relations within the family and with external stakeholders, as conflicts and tension among family members can have major implications for the family firm.

Emotional bonds emerge through organizational members' interactions when collaborating and experiencing success and failure (Sherony and Green, 2002). In family-owned organizations, family members share experiences and a mutual history (Gomez-Mejia et al., 2011). Given the blurred family and firm boundaries (Stevens et al., 2015), family members' emotions determine the firm's relationships and business activities (Eddleston and Kellermanns, 2007). Thus, particularly important for well-functioning families is maintaining strong emotional attachment, close ties, and high levels of harmony in both the family and the firm. Due to the stable relationships among family members, well-functioning families are also assumed to have more balanced and positive emotions that positively affect the level of emotional attachment in family firms. In family SMEs, "the interpersonal linkages, emotional bondings and affectionate ties that characterize all firms are possibly more complex and embedded" (Fletcher, 2000, p. 164), which may enhance the positive effect of family functionality on emotional attachment.

Well-functioning families with stable relationships and common interests enjoy a sense of continuity, since the level of conflict is low and the level of satisfaction is high. Such sense of continuity and the associated aspiration for the preservation of the firm and family wealth in the long-run can manifest in the family's desire for intra-family succession, which is typically a major goal of family firms (Chua, Chrisman, and Sharma, 1999; Zellweger et al., 2012). Often, firm-owning families are eager to maintain their wealth and keep the firm in family hands for generations. This symbolizes the family's heritage and tradition (Casson, 1999), and long-term investment (Berrone et al., 2010). Hence, family functionality leads to strong family bonds that

become a means of establishing family commitment and responsibility, and advance the family agenda across several generations.

In sum, prior research indicates that in family SMEs, greater family functionality ensues from achieving family goals rather than business goals (Danes et al., 1999).

H1: In family SMEs, family functionality has a positive impact on the five dimensions of SEW, which are family influence, identification, binding social ties, emotional attachment, and renewal of family bonds.

SEW and Innovativeness in Family SMEs

Effect of Family Influence, Identification and Emotional Attachment on Firm Innovativeness

Family influence derives from family members' power to control key firm decisions. Typically, family members can shape the firms' direction through their involvement in decision-making (Chua et al., 1999). Family identification with the firm stems from blurred family-firm boundaries (Stevens et al., 2015) and the two overlapping value systems. When family members identify with the firm, it may be more difficult for the organization to change and innovate. Family members' emotional attachment (Lawler, 2001) results from their shared history and knowledge of past events that influence how family members act at present. The family's emotions may be guided by their purpose to preserve the heritage of shared experiences, thereby influencing key decisions (Berrone et al., 2010; 2012).

The family's substantial influence on decision-making, their strong emotional attachment and identification with the business, and the ensuing desire to keep the firm running across generations may lead family firms to develop a long-term orientation (Miller and Le Breton-Miller, 2006). As innovations are needed for any firm's survival in the long run, such long-term orientation may in turn lead family firms to take the risk of improving their capacity to innovate to preserve their economic and non-economic utility (Classen et al., 2014). On the other hand, such long-term orientation may lead family members to act cautiously and have a passive attitude towards innovativeness, since engaging in the development of their innovation

capacity is risky and may put the firm's survival at stake (De Massis et al., 2015b). We argue that the second reasoning prevails for a number of reasons that we detail below.

First, given the overlap between management and ownership, families that influence, identify with, and are emotionally attached to the firm are more likely to pursue their family agenda rather than make risky innovation decisions (Gomez-Mejia et al., 2007; 2011; Stanley, 2010). Moreover, family members with high family ownership, strong identification with the firm due to the long periods of tenure of family executives (Zellweger, 2007), and intense emotional attachment to the firm, have typically invested most of their wealth in the firm and have the power (Carney, 2005) to move the organization in directions that diverge from investing in developing innovation capacity (Kotlar et al., 2014). What is more, family firms represent "the lifeblood of the family" (Kellermanns et al., 2012, p. 89) and the costs associated with potential business failure due to, for example, the unsuccessful development of innovativeness, often outweigh the benefits of success. Hence, the typically high power of family owners allows them to avoid potentially necessary investments in improving the family firm's capability to identify and seize innovation opportunities (Cabrera-Suárez, De Saá-Pérez, and Garcia-Almeida, 2001; Roessl, Fink, and Kraus, 2010).

Second, the link between family, firm reputation, and the goal of preserving the family's SEW may again reduce innovativeness, as any harm to the family's and the firm's reputation resulting, for instance, from the unsuccessful development of the capacity to innovate, implies harming their SEW (Deephouse and Jaskiewicz, 2013). High investments in developing the firms' innovativeness may put not only the family's financial wealth at risk, but also its reputation and status. Thus, in such circumstance, innovativeness is likely to decrease (e.g., Craig et al., 2014; De Massis et al., 2015b).

Such behaviors may be especially pronounced in family SMEs, which have distinct command and governance structures (Le Breton-Miller and Miller, 2006). For example, due to family SMEs' centralized decision-making (Speckbacher and Wentges, 2007), owning families

are heavily involved in business activities and usually play multiple roles (Songini and Gnan, 2015). Since active family SME owners have substantial authority over key decisions (De Massis et al., 2013b), enabling them to influence firm choices according to their preferences (for instance, preserving their SEW), they can steer the firm towards their preferred, possibly less risky, direction. As an example, although vital for firm innovativeness (Naranjo-Valencia, Jiménez-Jiménez, and Sanz-Valle, 2011), family SME owners tend to provide little opportunity to develop an organizational culture that cultivates innovation capacity (Laforet, 2016), suggesting a negative effect of owners' risk-aversion on innovativeness in family SMEs.

Moreover, family SMEs often suffer from a liability of smallness (Freeman, Carroll, and Hannan, 1983). The associated limitations in resources (Aldrich and Auster, 1986), skill, and capabilities (Laforet, 2016) may deter their innovativeness for at least two reasons linked to family members' influence, identification, and emotional attachment. First, firm-owning families that value family control and influence are likely to show a modest capability to attract non-family managers (Colombo et al., 2014) and delegate decision-making responsibilities, as this changes the distribution of power. Second, despite facing financial constraints, owning families are skeptical about external financial capital sources, since external investors typically demand involvement in exchange for capital (Chrisman and Patel, 2012), restricting family control and the possibility to advance a particularistic family-oriented agenda (Sciascia et al., 2015). Given these financial restrictions, we argue that families that highly influence their SME's key decisions, identify strongly with and are emotional attached to the SME, make less recourse to external financing. Consequently, a higher overlap between family wealth and firm equity is likely to occur (Sciascia et al., 2015). Sciascia et al. (2015) show that the firm equity and family wealth overlap is associated with a negative relationship between family ownership and R&D intensity, whereas this relationship turns positive when the overlap is low. Although the authors focus on innovation input (namely, R&D intensity), which differs from innovativeness, it could be argued that, *ceteris paribus*, higher innovation inputs are likely to

lead to a higher capacity to innovate. Their results thus offer further support for the view that family owners are less likely to invest in the development of innovation capacity in the case of blurred family-firm boundaries and a high overlap of family and firm equity.

In sum, when family members' influence, identification, and emotional attachment are strong, their high power, low family-firm boundaries, and other owning family characteristics affect the SME's innovativeness.

H2: In family SMEs, family influence, family identification, and emotional attachment reduce firm innovativeness.

Effect of Binding Social Ties and Renewal of Family Bonds on Firm Innovativeness

Through binding social ties between family members and diverse external and internal stakeholders (Miller and Le Breton-Miller, 2005), family firms develop knowledge networks that are vital to their innovativeness, as tacit knowledge can be shared among network members (Sirmon and Hitt, 2003). High innovation capacity (Spriggs et al., 2013) and dynamic innovation capability (Chua et al., 2012) are determined by an open attitude towards social capital and networks, which is advantageous for joint innovation with external (Kraus, Pohjola, and Koponen, 2012) and internal partners (Cassia, De Massis, and Pizzurno, 2012).

Scholars argue that the intention to renew family bonds through intra-family succession has important implications for family firms' strategic decisions (e.g., Chua et al., 1999; Chrisman et al., 2012). Such intention involves transferring firm ownership and control to the next generation, with the consequence of extending the timeframe of strategic decisions (Chrisman and Patel, 2012), such as those aimed at boosting innovativeness. Therefore, the renewal of family bonds may lead owning family members to place greater emphasis on strategies that ensure the firm's future sustainability and competitiveness (Levenburg, Schwarz, and Almallah, 2002).

The capacity to internally transfer family firm-specific knowledge is important for developing innovativeness and enables the firm to reap the benefits of past knowledge over generations (Messeni Petruzzelli and Albino, 2012). However, knowledge rarely flows freely within organizations and is often tacit in nature, meaning that it can neither move freely within organizations nor be easily transferred (Von Krogh, Ichijo, and Nonaka, 2000). As such, organized knowledge transfer between the source and recipient (i.e., the predecessor and successor) is crucial for innovativeness (Cabrera-Suárez et al., 2001). This renewal of family bonds facilitates the creation of a close link between present and past (Zellweger et al., 2012) through which family history, including the firm's tacit knowledge, practices, and processes, and the families' shared values, norms, and beliefs can be handed down across generations (De Massis et al., 2016a), a vital ingredient for innovation (Sirmon and Hitt, 2003). Further, easier transfer of tacit knowledge among family members can ensue from intra-family succession, as predecessor and successor know each other and already have a trustful social relationship. As such, the knowledge source and recipient are continuously in direct contact, enabling the recipient to capture and internalize the tacit knowledge needed for innovativeness (Cabrera-Suárez et al., 2001).

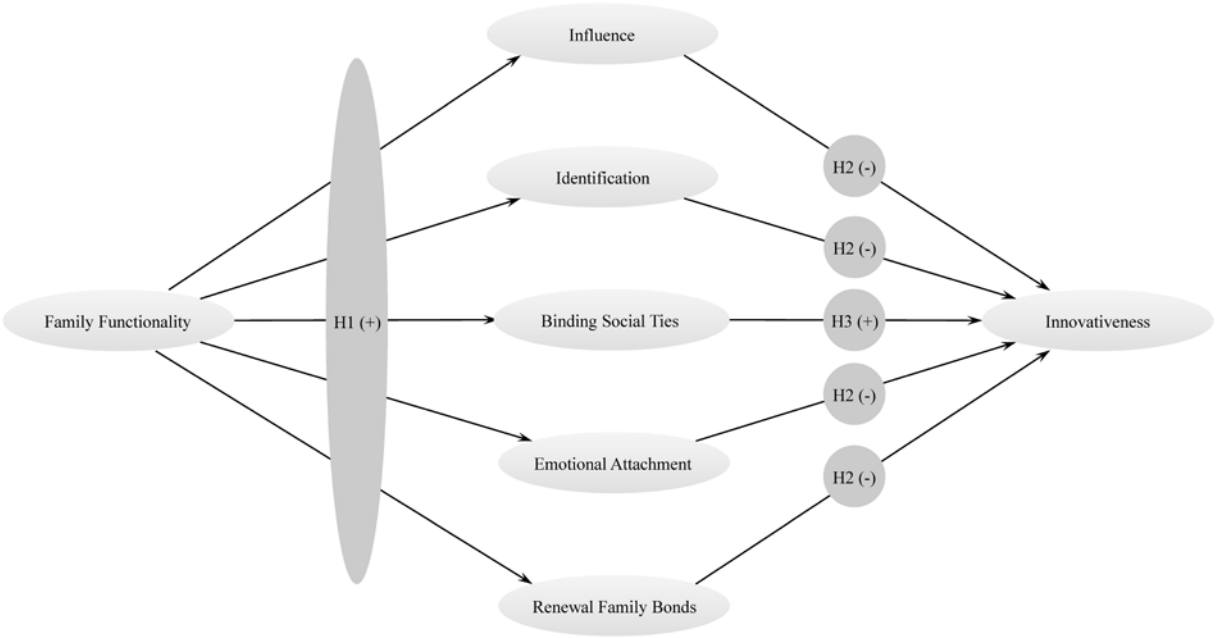
The typical disadvantage of family SMEs in terms of resources, know-how, and lack of access to outside knowledge (Laforet, 2016) may induce them even more to develop an open attitude to approaching external resources, capabilities, and knowledge, advancing their innovativeness. Further, transferring tacit knowledge may be even more important for family SMEs as they seek to retain their specific and crucial knowledge within the family and the firm. Following Cerrato and Piva (2012), we propose that knowledge transfer, both within family firms and between family firms and external partners, is facilitated when family members are recurrently involved in the family SME across generations.

In summary, we assume that close relationships with stakeholders, together with a certain "openness" towards knowledge sharing with external partners and across generations, and the

desire to renew family bonds facilitate the transfer of tacit knowledge and lead to higher innovativeness in family SMEs.

H3: In family SMEs, the family's binding social ties and the renewal of family bonds through intra-family succession increase firm innovativeness.

Figure 1 presents a graphical overview of our hypotheses.



Methods

Samples

Our samples were built through two data collection efforts in 2013 and 2015 using an online survey targeted at CEOs and board members of Finnish family firms. The basic population comprised all 348 firms listed in the membership dictionary of the Finnish Family Firms Association ("Perheyritysten liitto"[1]), the largest network of family firms in Finland.

The firms in our study had to meet several criteria: they had to be controlled by a dominant family (the majority of voting shares belong to the owner family) (De Massis et al., 2012), be

SMEs, and at least 6 years old to show a certain level of maturity. Further, the respondents had to be a member of the owning family to adequately assess family functionality and the existence and relevance of SEW.

After sending out the questionnaire twice in 2013 with a two-month interval, we received 161 completed questionnaires of family firms disclosing their name. The company names enabled us to access corporate information from the ORBIS/Bureau van Dijk database, a comprehensive corporate information source, and to identify 32 firms with double responses. Randomly excluding one of the double responses led to 129 single responses from a corresponding sample of 129 family firms. However, according to our definition, only 118 of the 129 firms are family SMEs and only 116 publish corporate information in the ORBIS/Bureau van Dijk database, leading to a final response rate of 33.33%, which is comparable to other studies of Finish family firms (e.g., Mustakallio, Autio, and Zahra, 2002). In the second data collection in 2015, we received responses from 103 family SMEs.

In the 2013 sample, 49.1% of respondents are CEOs and 50.9% board members, while in the 2015 sample, 56.3% are CEOs and 43.7% board members. In both samples, the majority of shares of each individual business are in family hands. Regarding the organizational form, most family firms that responded to our survey are private limited liability companies (95.7% in 2013; 95.1% in 2015). Furthermore, the family firms in our sample mostly operate in the manufacturing, wholesale, and retail industries. In general, the structure of our samples represents the industry affiliations of the Finnish Family Firms Association members, although manufacturing companies are slightly over-represented and financial and insurance companies marginally under-represented. In the 2013 sample, 81% of respondents are male and 19% female, while in the 2015 sample, 79.6% of respondents are male and 22.4% female. The age of respondents in both samples ranges from 31 to 70 years with an average 51.8 in 2013 and 52.5 in 2015. The average firm size is 66 employees (median: 43 employees) in the 2013

sample and 69 employees (median: 45 employees) in the 2015 sample. Table 1 summarizes the main characteristics of the firms that responded to our survey.

Insert Table 1 about here

Measures and Variables

Dependent Variable. Innovativeness is measured using previously validated scales (Eggers et al., 2013) through self-evaluation and self-perceived external appraisals of the firm's capacity to innovate.

Independent Variables. We assess *family functionality* by applying the APGAR scale of Smilkstein (1978) asking family members with a CEO or board of directors position whether they are satisfied with certain conditions that exist within the family circle, such as willingness to help, way of communication and solving problems, and interaction and social intercourse.

To measure SEW, we use the survey items of the "five major dimensions of SEW" by Berrone et al. (2012, p. 262).

Influence on the family firm refers to how family firms exert control over strategic decisions (Chua et al., 1999; De Massis et al., 2014) assessed by the number of shares owned by family members, the share of family members occupying executive positions, and the share of family members on the board of directors compared to non-family members (Berrone et al., 2012).

Identification of family members with the firm is measured by the sense of belonging, personal meaning, and reduction of business success to a personal level. In case of strong identification, the firm is regarded as an extension of the owning family, which affects the business processes and management style (Berrone et al., 2012).

Binding social ties refers to the social relationships of and among actors in the firm measured by the nature of relations with employees and other institutions, such as other

companies, professional associations, or government agents (Berrone et al., 2012).

Emotional attachment of family members is measured by the emotional bonds that exist between family members and the extent to which family members care about each other. According to Berrone et al. (2010), family members have a sound base of history, knowledge, and experience that brings value to the business in case of strong emotional attachment.

Renewal of family bonds through intra-family succession is assessed by the intention of handing over the family firm to succeeding generations. When family firms seek continuity of family influence over time (Naldi et al., 2007), the strategic orientations and decision-making processes are significantly affected (Berrone et al., 2010).

Control Variables. Consistent with prior research, we control for a number of factors that are shown to exert influence on innovativeness (Talke, Salomo, and Rost, 2010). At the firm level, *firm age*, *size* and *industry* affiliation are used as measures, while at the individual level, the *age* and *educational background* of respondents are taken into account. First, *firm age*, calculated as the number of years since the firm's foundation, is included to control for concerns regarding the firm's liability of newness and to acknowledge the potential of higher levels of innovativeness in younger firms (Stinchcombe, 1965). Indeed, firm age is a control variable commonly used in empirical research on innovativeness (Rubera and Kirca, 2012). Next, we controlled for *firm size* measured by number of employees, as firm size is considered one key factor potentially affecting firm innovativeness (Covin et al., 2016), and its inclusion allows controlling for the firm's relative scale (Santamaría and Surroca, 2011). Finally, we included industry affiliation as a third control variable at the firm level, as prior research stresses that industry type can affect firm innovativeness (Damanpour, Walker, and Avellaneda, 2009).

At the individual level, we controlled for *age*, since innovativeness and risk are closely related, and existing research shows that age can influence risk-related variables, such as R&D expenses (Barker and Mueller, 2002). Moreover, we controlled for *educational background* as

prior studies show that higher education qualification fosters sensitivity to the importance of the strategic orientation, such as innovativeness (Filser and Eggers, 2014).

Table 2 reports the variables and the corresponding survey items used in our model.

Insert Table 2 about here

The scale items of the independent variables are all scored using a 5-point Likert-type scale ranging from 1 ("do not agree") to 5 ("strongly agree"), with higher scores indicating higher levels of the construct in question. Since our survey is geared towards Finnish-speaking business executives, it was subjected to a double-blind translation to improve the validity and reliability of the measuring instruments. The survey translators are all academics with a background in entrepreneurship and innovation research. First, the original scale items were translated from English into Finnish, and subsequently proofread by other independent translators. Where the meaning after translation differed, both translators discussed the issue and new wording for the question was developed. Two additional translators checked the revision of the questions. Finally, all translations were once again compared with the original questions before conducting the survey to identify and correct errors that may have arisen due to interpretation differences (Brislin, 1980).

Data Analysis

We used *SPSS* and *AMOS* (v. 21.0) as well as the *R* package '*lavaan'* to design and calculate the structural equation model (SEM) with maximum likelihood estimation for the factor and path analyses carried out in two-stages. First, an exploratory factor analysis was undertaken to define and validate the underlying dimensions of each variable (generated by calculating the average score). Second, the model was built and tested for multicollinearity (correlations are all below 0.8, cp. Kennedy, 1992), convergent and discriminant validity. Since two samples were used (2013 and 2015) and the respondents may not be the same in both years, we applied a

multi-group approach, testing for differences in measurement, intercepts, and means, and statistically compared differences in the structural relationships between 2013 and 2015 (Byrne, 2004). Additionally, we integrated five control variables in this model to check for background effects (industry, firm size, firm age, education, and age of respondent).

Convergent validity was indicated, since Cronbach's Alpha is close to or above 0.7 (Hair, Black, Babin, and Anderson, 2010) for all dimensions in both models, while the average variance extracted (AVE) is always above 0.5. The multi-grouped confirmatory factor analyses (CFA) reflecting all latent variables also confirmed discriminant validity, since the square root of AVE is always greater than the largest latent variable correlation (Fornell and Larcker, 1981). The differences between both groups were also found insignificant, demonstrating that all items reflect the same constructs in both samples (see Tables 3 and 4)[2].

Insert Tables 3 and 4 about here

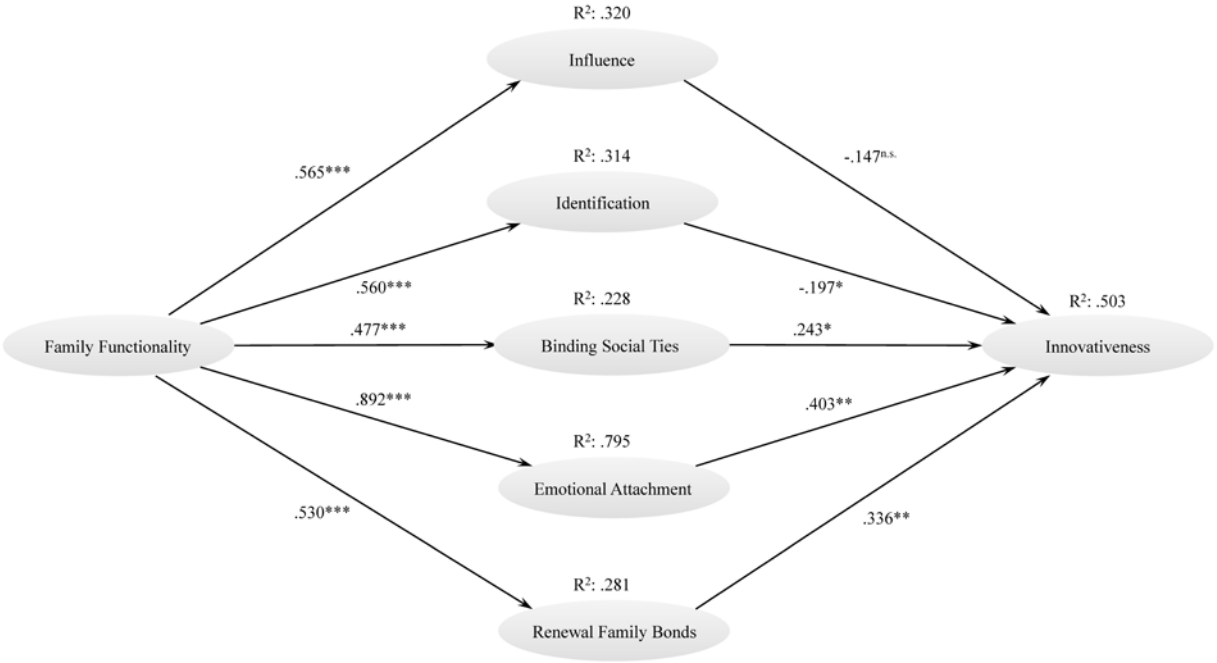
The model fit statistics show a good fit. The ratio of model explanation to parsimony, CMIN/DF, has a value below 3 in both models, which is associated with a good descriptive fit considering the model size (Kline, 1998). Likewise, the lack-of-fit indices RMSEA (should be < .07) and SRMR (< .09), as well as the goodness-of-fit indices CFI and IFI (both > .95), indicate a sufficiently fitting multi-group model (Hu and Bentler, 1999). Potential response bias was evaluated by comparing the composition of early and late respondents (Churchill, 1991). Concerning firm age and size, no significant differences between early and late respondents were found.

To reduce the potential of socially desirable answers, we followed the recommendations of Podsakoff et al. (2003), offering all respondents anonymity and confidentiality during data collection. Further, we asked the respondents to answer the questions as truthfully as possible and highlighted in the cover letter that there were no right or wrong answers. Using the single-common-method-factor approach, we tested for the presence of common method bias. To do

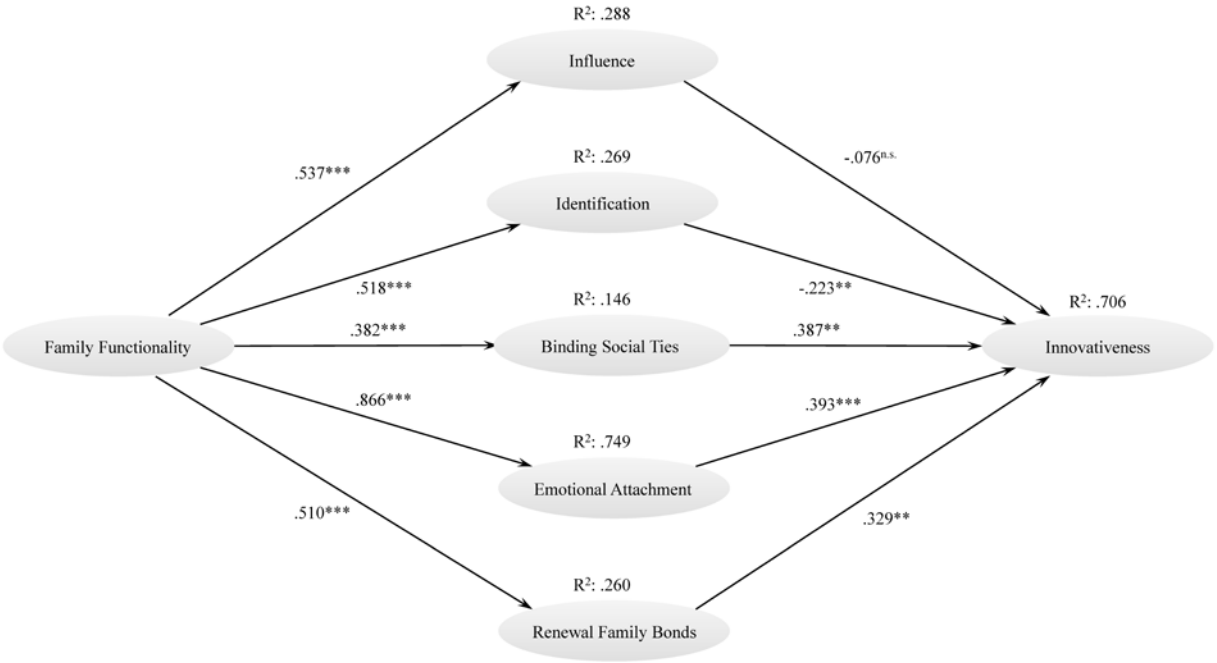
so, we estimated two CFAs (a, b) for each sample (2013, 2015) that (a) excluded versus (b) included a latent common method bias variable with all indicators loading on it, comparing both to the structural parameters (correlations) between the present latent variables. Following the assumption that a statistical difference would indicate that the 'method' component is substantial compared to the 'trait' component (Podsakoff et al., 2003, p. 891), we then tested all correlations between models (a) and (b) for differences. In both years, all differences are non-significant (largest difference in 2013 between family bonding social ties and family functionality, 0.32 [a] to 0.41 [b], $t = .74$, $p = 0.39$; largest difference in 2015 between emotional attachment and family identification, 0.56 [a] to 0.52 [b], $t = 0.16$, $p = 0.70$). Further, looking at this latent factor, only 2.5% and 2.78% of total variance is observed in the 2013 sample and the 2015 sample respectively if accounting for the theoretical and common method factor simultaneously. Overall, a substantial common method bias is highly unlikely. In addition, we made use of the double responses in the 2013 sample by rotating the respondent of the dependent and independent variables. We found no significant differences regarding either the results or the goodness of fit statistics. Considering the endogenous variables, the double responses are strongly correlated.

Results

An initial test of measurement invariance indicated weak metric invariance, that is, all items showed equal loadings and intercepts in both samples, but with distinct means (Table 5). This finding can be understood as the differences between the respondents in the 2013 sample and the 2015 sample, indicating that they perceived the overall levels of family functionality and SEW dimensions differently. In line with this, the results allow multiple conclusions on the proposed hypotheses (see Figures 2 and 3, and Table 6).



***p ≤ 0.01; **p ≤ 0.05; *p ≤ 0.1; n.s.: not significant (p > .05)



***p ≤ 0.01; **p ≤ 0.05; *p ≤ 0.1; n.s.: not significant (p > .05)

Insert Tables 5 and 6 about here

Family Functionality and Socioemotional Wealth in Family SMEs

The SEM (Figures 1 and 2) indicates that family functionality positively affects the influence of all five SEW dimensions (*H1*), while emotional attachment has the strongest effect on family functionality. Therefore, hypothesis *H1* on family functionality being positively related to the SEW multi-dimensional concept is confirmed.

Socioemotional Wealth and Innovativeness in Family SMEs

Differences prevailed in the effect of each SEW dimension on innovativeness. Among the assumed negative predictors of innovativeness (*H2*), only identification with the firm was found as expected. Contrarily, family members' influence on the firm did not show any significant effect, and emotional attachment was found to have a strong significant effect on family firm innovativeness, but in the opposite direction (positive). This supports the assumption that a high degree of identification with the firm promotes an inclination towards risk aversion. Regarding the positive effects on innovativeness (*H3*), our findings show the expected direction and effect for binding social ties and renewal of family bonds.

In summary, although we do not find full support for *H2*, hypotheses *H1* and *H3* are confirmed. Some supplementary results should be highlighted. First, the differences between the results on the 2013 and 2015 samples indicate that the influence of family functionality on binding social ties is weaker in the 2015 sample compared to the 2013 sample (0.38 instead of 0.48, difference $p < .05$). However, the impact of binding social ties improves in the 2015 sample (2015: 0.39, 2013: 0.24, $p < .05$). Second, the robustness checks comparing the models with and without control variables, the robust estimates, and the factor score-based bootstrapped regressions, all indicate that neither the control variables nor the estimation

methods altered our findings in the 2013 and the 2015 samples. Firm age increased innovativeness in the 2015 sample (.29), however, the Wald difference test ($t(1) = 1.13$, $p > .05$) rejected a significant difference[3].

Discussion

This study explores the relationship between family functionality, SEW, and innovativeness in family SMEs. The findings show (1) a strongly positive and significant link between family functionality and the five SEW variables, and (2) a significant link (positive and negative) between four of the five SEW variables and innovativeness.

Family Functionality and Socioemotional Wealth

The results show a positive relation between family functionality and SEW. This implies that if the SME-owning family is satisfied with the general conditions prevailing in the family, including stable intra-familial relationships, common interests, and mutual understanding, amongst others, the focus on SEW is enhanced. Thus, family functionality in terms of integrity and strong, well-functioning, and satisfying family relationships determines how family members act as owners (Stevens et al., 2015), on which priorities they focus, and the extent to which they can achieve family goals (Danes et al., 1999). This is consistent with pioneering research in structural-functional theory (e.g., Popenoe, 1996; Johnson, 1971) and family system theory (e.g., Danes et al., 2008; Stafford et al., 1999) arguing that the family's functional integrity and the stability of relationships within the family system are important in shaping the priority and behavior of key family members and, ultimately, of the family firm in case of firm-controlling families. This responds to recent calls to draw on family science and take into account family functioning and family member relationships to advance current knowledge of family firm behavior (Jaskiewicz and Dyer, 2017; Jaskiewicz et al., 2017).

Emotional attachment shows the strongest link with family functionality, while influence, identification, binding social ties, and renewal of family bonds, are all relatively equally strong. This finding may relate to the strong interrelatedness of the family, its emotions and culture with the firm, its activities and decision-making, since the firm's organizational culture is strongly affected by the family's emotions (Ashforth and Humphrey, 1995) and culture (Litz and Kleysen, 2001). As the family-firm boundaries are often blurred (Cennamo et al., 2012), affective considerations and family values are transferred to the firm, leading to higher value congruence. Such value congruence refers to the extent to which individuals perceive similar organizational values (O'Reilly and Chatman, 1991), which leads to a more cohesive culture, consistent and common expectations of behavior (Quinn and Rohrbaugh, 1983), and a shared vision (Khazanchi, Lewis, and Boyer, 2007).

Socioemotional Wealth and Innovativeness

Generally, family firm innovativeness is determined by the family's propensity to preserve SEW given that family identification with the firm, binding social ties, emotional attachment, and renewal of family bonds exert a significant influence on family firm innovativeness.

The family's identification with the firm negatively affects firm innovativeness. Blurred family-firm boundaries can thus hamper firms' capacity to innovate, since risk-aversion may result in more conservative and careful decisions when the identification of family members with the firm is high (Cucculelli, 2013).

However, in contrast to *H2*, the family's emotional attachment stemming from shared experiences, values, and wealth, shows the strongest positive effect on family SME innovativeness. This positive relationship may derive from the family's desire to preserve its heritage over a long time. It could be argued that family members with strong emotional attachment to the firm tend to feel more responsible and committed to the firm and its long-term success, which outweigh the potential risks of innovation, including the risk of business

failure due to unsuccessful innovations. This finding is in line with research suggesting that responsibility and commitment can motivate family members to act in the firm's best interests (Corbetta and Salvato, 2004), which can support the fulfillment of organizational goals and improve firm performance (Davis, Schoorman, and Donaldson, 1997). As innovativeness is known for its positive effect on firm performance (Hult et al., 2004), firm-owning families with strong emotional attachment to the business may recognize the importance of their capacity to engage in innovation.

Binding social ties and the desire to renew family bonds positively affect innovativeness. Binding social ties are the foundation of well-functioning networks with internal and external stakeholders. Strong social ties within a business facilitate the internal exchange and expansion of tacit knowledge, a vital ingredient for firm innovativeness (Sirmon and Hitt, 2003). As a consequence, the ability to learn (Fernandes and Ussman, 2013) is promoted in terms of formal and informal learning processes that are advantageous for family firm innovativeness (Laforet, 2013), requiring a strong relation among family members, but also with and among employees. Hence, the firm's social ties are important determinants of innovative behavior and can eventually lead to high innovativeness (Spriggs et al., 2013).

The ability to transfer family firm specific knowledge through intra-family succession supports innovativeness, as the firm can reap the benefits of the potential value of past knowledge over generations (Messeni Petruzzelli and Albino, 2012). Through the close link between the present and the past (Zellweger and Sieger, 2012), tacit knowledge, organizational practices and processes, as well as the family's shared values, norms, and beliefs are transferred across generations (De Massis et al., 2016a). Due to the importance of tacit knowledge, it is vital for family firms to ensure that such knowledge is shared and combined through trusted and close-knit relationships associated with intra-family succession (Sirmon and Hitt, 2003). Accordingly, we echo recent calls to investigate innovation issues across generations (Barczak, 2014) and encourage scholars to conduct such investigations in family

firms where the temporal dimension may play an important role (Sharma, Salvato, and Reay, 2014).

Finally, the rejection of family influence as a negative correlate of innovativeness is an interesting "non-result" (Bettis et al., 2014), suggesting that the relationship is more complex than hypothesized. For example, there may be other underlying considerations associated with family influence working in a positive direction. Similarly to emotional attachment, family influence through the family members' involvement in decision-making may positively affect innovativeness when the family strives to maintain its legacy in the long-run and recognizes the key role of the capacity to innovate in their firm's long-term performance. Thus, firms may be willing to accept the risks of developing their innovativeness to maintain their economic and non-economic wealth (Classen et al., 2014). Furthermore, Kellermanns et al. (2012) argue that family influence can help family firms benefit from their capacity to innovate. Accordingly, family influence may improve the firm's quality of decision making and risk management (March and Shapira, 1987), as well as the ability to identify and evaluate the firm's opportunities and challenges (Zahra, 2005). This positive effect and the negative effect we proposed may have produced the insignificant net effect observed. This conjecture to explain the insignificant effect of family influence, although intuitively plausible, would seem to diverge from the consistent body of research showing that family influence affects innovation inputs and outputs (e.g., Matzler et al., 2015). Understanding whether and why such effect disappears when we shift our attention from innovation inputs/outputs to innovativeness is an area that warrants future investigation.

Theoretical Implications

Our study contributes to family firm research and particularly to the flourishing literature on family firm innovation (Chrisman et al., 2015b; Duran et al., 2015). Despite the multidimensional nature of SEW and the potential effects of its five dimensions, prior research

largely treats SEW as a unidimensional construct. In particular, while the five SEW dimensions enjoy acceptance in family firm literature, empirical studies examining the effect of each dimension are scarce (Miller and Le Breton-Miller, 2014). Some scholars argue that this simplistic approach engenders theoretical limitations and empirical indeterminacy (e.g., Chua et al., 2015; Schulze and Kellermanns, 2015). By including the effect of the different SEW dimensions and responding to recent calls to distinguish the SEW dimensions to accurately predict family firm behavior (Chua et al., 2015), we provide a more fine-grained understanding of the mechanisms behind family firm innovativeness and contribute to addressing key theoretical and empirical issues in prior SEW research.

The enhanced understanding of the role of family functionality and the SEW dimensions in shaping firms' innovativeness can reconcile the mixed findings in prior family firm innovation literature focusing primarily on innovation inputs and outputs (De Massis et al., 2013a). Thus, our study points to the risks of neglecting the family's functional integrity and stability of relationships among family members to fully understand family firm behavior, and responds to recent calls to include an examination of the family and its heterogeneity to enrich current family firm research (Jaskiewicz and Dyer, 2017; Jaskiewicz et al., 2017).

Managerial implications

Our findings are also important for practice because innovativeness is vital for the long-term survival of any firm (Hult et al., 2004). By adding to our understanding of the SEW dimensions that lead to a greater or lesser capacity to innovate, and the positive effect of family functionality on such SEW dimensions, our findings provide family SMEs' owners, managers, and consultants with a practical way to help shape their firms' innovativeness. For instance, even in the presence of well-functioning families, family members should beware that a higher degree of identification of family members with the firm will likely result in lower innovativeness. As such, family firm practitioners could sensitize family members to

circumvent self-presentation and the external expression of pride, or implement practices aimed at educating family members to distinguish family aspects from business aspects so as to reduce viewing the family business success as their own. Conversely, the pursuit of other family-centered non-economic goals, such as binding social ties, emotional attachment of family members to the firm, and renewal of family bonds through intra-family succession, helps increase innovativeness. As such, they could benefit from determining generally valid codes of conduct and creating the prerequisites for trustful relationships and norms of reciprocity, as well as from establishing internal principles to help maintain a positive self-concept and defining how the welfare of family members is protected. Moreover, open cross-generational dialog, consensus on the long-term direction, explicit succession regulations, and clear distribution of decision-making power, family control, and independence, in addition to preserving the family legacy and traditions, foster innovativeness across generations. Last, our study's findings caution practitioners to reflect more deeply on the functioning of their families as a critical management lever to influence the pursuit of family-centered non-economic goals and, in turn, the firm's innovativeness.

Limitations and Future Research Directions

As with all studies, ours has limitations, which also provide opportunities for future research. First, our analysis of Finnish firms restricts the generalizability of our findings in a global context. Previous studies (e.g., Mustakallio et al., 2002) highlight that Finnish firms have unique ownership and governance structures that are strongly shaped by their local culture. Furthermore, differences in cultures, economic development, and legal regimes may influence both the effect of family functionality on the SEW dimensions and the effect of the SEW dimensions on innovativeness (Gedajlovic et al., 2012). Hence, the analyzed relationships may change across countries given that innovation-related processes and capabilities can be bound to cultural contingencies (Hayton, George, and Zahra, 2002). Additionally, variations over time

are possible. Future research could apply our model across different countries, especially those with divergent cultures, economic development stages, and legal regimes, and over multiple years, ideally by employing a longitudinal design.

Second, the SEW priorities of individuals may vary, even among members of the same family (Chua et al., 2015). Although our double respondents' answers indicated a low variance of SEW priorities within the family, we were unable to take into account the net effects of the different SEW dimensions. Therefore, we invite scholars to develop more sophisticated research designs that account for how the five SEW dimensions may affect each other, and whether such mutual influences should be modeled as dependent or interdependent.

Third, we analyzed the relationships in the context of family SMEs. As such, our findings may not be generalizable to large family firms, and future research is needed to determine whether the linkages and obtained insights differ in large family firms.

Fourth, our study focuses on family firm capacity to innovate, which may vary depending on the type of innovation considered. For instance, this capacity may change depending on the radical versus incremental, disruptive versus sustaining, and exploratory versus exploitative nature of the innovation. We thus welcome future research that explicitly includes innovation types when studying family firm innovativeness. Further, we focus on product and service innovation, whereas future research could also examine process, organizational, and business model innovation.

Moreover, prior scholars acknowledge the heterogeneity among families (Aldrich and Cliff, 2003; Olson et al., 2003). Yet, the integration of prevalent family differences in theory building and empirical testing in the context of family firms is still in its infancy (Danes, 2014; James, Jennings, and Breitkreuz, 2012; Powell et al., 2017) and scholars commonly apply management theories that include neither the family nor its heterogeneity (Jaskiewicz and Dyer, 2017). We therefore envisage future studies on family firm innovativeness aimed at capturing further sources of heterogeneity among different families.

Finally, there may be other factors that affect innovativeness in family SMEs, including imminence of succession (Chua, Chrisman, and Sharma, 2003) and family firm incumbents' attitude towards intra-family succession (De Massis et al., 2016b). These factors suggest additional ways in which family functionality and family owners' non-economic goals affect family firms' capacity to innovate.

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Table 1. Samples Characteristics

Characteristics		Sample 2013	Sample 2015	Population
Percentage of Shares Owned by Family Members	51% to 75%	10.3%	10.7%	
	76% to 100%	89.7%	89.3%	
Size of Firms (Employees)	Micro business = 10 employees or fewer	19.8%	16.5%	24.7%
	Small business = between 11 and 50 employees	36.2%	36.9%	38.8%
	Medium business = between 51 and 250 employees	44.0%	46.6%	26.4%
	Large business = over 250 employees	-	-	10.1%
Industry	Agriculture, forestry and fishing	1.7%	1.9%	2.0%
	Manufacturing	39.7%	38.8%	27.4%
	Electricity, gas, steam, and air conditioning supply	1.7%	1.4%	1.8%
	Building and construction	5.2%	3.9%	5.5%
	Wholesale and retail trade	27.6%	27.8%	29.6%
	Transportation and storage	2.6%	2.9%	4.4%
	Accommodation and food service activities	1.7%	1.9%	3.3%
	Information and communication activities	1.7%	1.9%	2.4%
	Financial and insurance activities	1.7%	1.9%	4.8%
	Real estate activities	2.6%	2.9%	2.9%
	Administrative and support service activities	4.3%	4.9%	4.4%
	Human health and social work activities	0.9%	1.0%	1.1%
	Arts, entertainment and recreation	0.9%	1.0%	1.1%
	Other service activities	7.7%	7.8%	9.3%
Legal Form	Private limited liability company	96.1%	95.1%	95.7%
	Public limited liability company	3.9%	4.9%	4.3%

Table 2. Variables and Survey Items

Variable	Questions
Family Functionality (Smilkstein, 1978)	I) I am satisfied with the help that I receive from my family when something is troubling me II) I am satisfied with the way my family discusses items of common interest and solves problems III) I am satisfied with the way my family expresses affection and responds to my feelings, such as anger, sorrow, and love
Influence on the Family Firm (Berrone et al., 2012; Cennamo et al., 2012)	I) The majority of shares in the family business are owned by family members II) In the family business, most executive positions are occupied by family members III) The board of directors is mainly composed of family members
Identification of Family Members with the Firm (Berrone et al., 2012; Cennamo et al., 2012)	I) Family members have a strong sense of belonging to the firm II) Family members feel that the family business success is their own success III) Being a family member of the family business helps define who we are IV) Family members are proud to tell others that we are part of the family business
Binding Social Ties (Berrone et al., 2012; Cennamo et al., 2012)	I) In the family firm, non-family employees are treated as part of the family II) In the family business, contractual relationships are mainly based on trust and norms of reciprocity III) Building strong relationships with other institutions (i.e., other companies, professional associations, government agents, etc.) is important for the family business
Emotional Attachment of Family Members (Berrone et al., 2012; Cennamo et al., 2012)	I) Emotions and sentiments often affect decision-making processes in the family business II) Protecting the welfare of family members is critical to us III) In the family business, affective considerations are often as important as economic considerations IV) Strong emotional ties among family members help us maintain a positive self-concept
Renewal of Family Bonds through Intra-Family Succession (Berrone et al., 2012; Cennamo et al., 2012)	I) Continuing the family legacy and tradition is an important goal for the family business II) Family members would be unlikely to consider selling the family business III) Successful business transfer to the next generation is an important goal for family members IV) Preservation of family control and independence are important goals for the family business
Innovativeness (Eggers et al., 2013)	I) We consider ourselves an innovative company II) Our business is often first to market with new products and services III) Competitors in this market recognize us as leaders in innovation
Control Variables	Firm Level: I) Firm age, firm size, industry Individual Level: II) Age, education

Table 3. Descriptive Statistics: Means, Standard Deviations, Square Root of AVE and Correlations

Model 1 (Sample 2013; *n*=116)

	Mean	SD	√ AVE	Family Functionality	Influence	Identification	Binding Social Ties	Emotional Attachment	Renewal of Family Bonds
Family Functionality	4.043	.705	.761						
Influence	4.366	.584	.854	.553					
Identification	4.540	.541	.799	.547	.302				
Binding Social Ties	3.694	.719	.754	.479	.265	.262			
Emotional Attachment	4.233	.671	.728	.444	.491	.486	.426		
Renewal of Family Bonds	4.164	.757	.772	.526	.291	.288	.252	.468	
Innovativeness	3.902	.728	.779	.473	.174	.115	.419	.507	.485

Model 2 (Sample 2015; *n*=103)

	Mean	SD	√ AVE	Family Functionality	Influence	Identification	Binding Social Ties	Emotional Attachment	Renewal of Family Bonds
Family Functionality	4.042	.729	.781						
Influence	4.374	.580	.880	.517					
Identification	4.566	.594	.822	.497	.257				
Binding Social Ties	3.092	.436	.717	.366	.189	.182			
Emotional Attachment	4.267	.641	.709	.425	.440	.423	.311		
Renewal of Family Bonds	4.078	.769	.751	.471	.243	.234	.172	.401	
Innovativeness	3.861	.727	.789	.504	.196	.057	.415	.569	.480

Correlations and AVE (average variance extracted) based on multi-group CFA; ***p ≤ 0.01; **p ≤ 0.05; *p ≤ 0.1

Table 4. Construct and Model Validity

	Model 1 (Sample 2013; *n*=116)		**Model 2 (Sample 2015; *n*=103)**	
Construct Validity	**Cronbach's Alpha**	**AVE**	**Cronbach's Alpha**	**AVE**
Family Functionality	.831	.580	.835	.610
Influence	.807	.729	.809	.775
Identification	.836	.639	.852	.676
Binding Social Ties	.727	.569	.679	.514
Emotional Attachment	.716	.530	.701	.502
Renewal of Family Bonds	.693	.596	.653	.565
Innovativeness	.818	.607	.827	.622
Model Validity	**Multi-group model**			
CMIN/DF	1.284			
SRMR	.068			
RMSEA	.051			
CFI	.949			
IFI	.952			

Cronbach's Alpha, AVE (average variance extracted) and model fit indices based on multi-group CFA; ***p ≤ 0.01; **p ≤ 0.05; *p ≤ 0.1

Table 5. Differences in Model Fit

Model	**DF**	**Chi-Square**	**p**
Unconstrained Model	548	703.38	
+ Measurement Weights	10	.664	1.000
+ Intercepts	10	2.445	.992
+ Means	18	61.684	.000

(Assuming the unconstrained model to be correct)

Table 6. Family Functionality, Socioemotional Wealth, and Innovativeness in Family SMEs

	Model 1 (Sample 2013)		**Model 2 (Sample 2015)**		
Variable	**R^2**		**R^2**		
Influence	.320		.288		
Identification	.314		.269		
Binding Social Ties	.228		.146		
Emotional Attachment	.795		.749		
Renewal of Family Bonds	.281		.260		
Innovativeness	.503		.706		
Relationship Variables	**Standardized Estimates**	**z**	**Standardized Estimates**	**z**	**Wald (t)**
Family Functionality -> Influence	.565***	5.975	.537***	5.550	.059$^{n.s.}$
Family Functionality -> Identification	.560***	5.465	.518***	4.878	.005$^{n.s.}$
Family Functionality -> Binding Social Ties	.477***	4.038	.382**	2.966	3.528*
Family Functionality -> Emotional Attachment	.892***	7.132	.866***	6.407	.172$^{n.s.}$
Family Functionality -> Renewal of Family Bonds	.530***	4.501	.510***	4.037	.046$^{n.s.}$
Influence -> Innovativeness	-.147$^{n.s.}$	-1.347	-.076$^{n.s.}$	-.836	.291$^{n.s.}$
Identification -> Innovativeness	-.197*	-1.741	-.223**	-2.262	.000$^{n.s.}$
Binding Social Ties -> Innovativeness	.243*	2.002	.387**	3.046	2.704*
Emotional Attachment -> Innovativeness	.403**	2.358	.393***	2.581	.002$^{n.s.}$
Renewal of Family Bonds -> Innovativeness	.336**	2.549	.329**	2.572	.007$^{n.s.}$

Multi-group model, ***p ≤ 0.01; **p ≤ 0.05; *p ≤ 0.1; $^{n.s.}$: not significant (p > .05)

[1] Membership criteria: the majority of voting rights are in the hands of one family and at least one family member is involved in the firm`s management.

[2] Since the dimensionality of family functionality with five dimensions has not been established frequently, we separately analyzed this issue with a separate multi-group CFA for 2013 and 2015. In order to do so, six different models were estimated ranging from one to six factors aligning dimensions based on the results of previously conducted maximum likelihood explorative factor analyses (promax rotation) with the same number of dimensions. Overall model fit confirmed the five-dimensional model (e.g., CFI_{2013} = .97, CFI_{2015} = .95, $SRMR_{2013}$ = .05, $SRMR_{2015}$ = .05) and illustrated no issues regarding convergent or discriminant validity.

[3] Robustness was assessed to safeguard against methodological issues. First, firm age, firm size, industry (dummy variables), age and education (dummy variables) were deployed as separate manifest variables and correlated with all other measures (for 2013 and 2015). This alternative specification of multi-group model was applied to both datasets in order to investigate background effects not captured before. Second, Huber-White robust standard error estimates were used in the multi-group models to check whether unequal error variances biased our results. Third, factor scores for each latent variable were obtained from the multi-group models and used in bootstrapped regressions (5,000 replications) for both years for the purpose of exploring possible inappropriateness of structural equation modeling for the given sample sizes.